Epidemiological characteristics and diagnostic approach in patients admitted to the emergency room for transient loss of consciousness: Group for Syncope Study in the Emergency Room (GESINUR) study

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Aims To assess the clinical presentation and acute management of patients with transient loss of consciousness (T-LOC) in the emergency department (ED).

Methods and results A multi-centre prospective observational study was carried out in 19 Spanish hospitals over 1 month. The patients included were ≥14 years old and were admitted to the ED because of an episode of T-LOC. Questionnaires and corresponding electrocardiograms (ECGs) were reviewed by a Steering Committee (SC) to unify diagnostic criteria, evaluate adherence to guidelines, and diagnose correctly the ECGs. We included 1419 patients (prevalence, 1.14%). ECG was performed in 1335 patients (94%) in the ED: 498 (37.3%) ECGs were classified as abnormal. The positive diagnostic yield ranged from 0% for the chest X-ray to 12% for the orthostatic test. In the ED, 1217 (86%) patients received a final diagnosis of syncope, whereas the remaining 202 (14%) were diagnosed of non-syncopal transient loss of consciousness (NST-LOC). After final review by the SC, 1080 patients (76%) were diagnosed of syncope, whereas 339 (24%) were diagnosed of NST-LOC ($P < 0.001$). Syncope was diagnosed correctly in 84% of patients. Only 25% of patients with T-LOC were admitted to hospitals.

Conclusion Adherence to clinical guidelines for syncope management was low; many diagnostic tests were performed with low diagnostic yield. Important differences were observed between syncope diagnoses at the ED and by SC decision.

Keywords Syncope • Emergency department • Transient loss of consciousness

Introduction

The high prevalence of patients with transient loss of consciousness (T-LOC) at emergency departments (EDs) is well known. Several studies have quantified the incidence from 0.9 to 3%, although most agree on the lower rate. Of these patients, 43–98% will be hospitalized.[1–4] Nevertheless, most studies of T-LOC in the ED reflect the experience of only one centre or of just a few local centres, as in the OESIL study and RESASTER study.[1,5] Thus, the present study introduced to multiple centres the European Society of Cardiology (ESC) guidelines for the management of patients with T-LOC in the ED. This study was performed in homogeneous hospitals that are included in a public healthcare system (PHS).

The Group for Syncope Study in the ER (GESINUR) study stems from a co-ordinated work scheme drawn up by the Scientific Committee of the Syncope Task Force Group of the Spanish Society of Cardiology and the Arrhythmia Section from the Spanish Society of Emergencies. GESINUR is an observational study that describes the clinical and epidemiological characteristics of patients admitted to the ED with T-LOC as well as the current diagnostic approach and compares these findings with the standardized diagnoses following the ESC guidelines.

Methods

Participating centres

The GESINUR study was a multi-centre prospective observational study carried out in 19 Spanish hospitals in the same PHS from November 15 to December 15. We included all patients admitted to the ED due to an episode of T-LOC (defined as a sudden and transitory LOC with complete recovery) occurring within the 24 h prior to their admission. Each hospital has a 24-h ED, a Cardiology Department, a Coronary Unit, and, typically, an Electrophysiology Unit.

Definitions

According to the clinical characteristics and the ESC guidelines for syncope, patients were divided into two large groups: syncope and non-syncopal transient loss of consciousness (NST-LOC). Syncope was defined as a transient, self-limited LOC that usually leads to a fall because of transient global cerebral hypoperfusion. On the other hand, the NST-LOC group included those patients with T-LOC, but without syncope.[6] Abnormal results of additional tests performed in the ED were considered diagnostic when potentially related to the cause of T-LOC.

Cohort study

Patient selection criteria

We included all patients $\geq$14 years who attended the ED due to T-LOC. Patients with the following conditions were excluded: T-LOC due to cranium-encephalic trauma, an episode of sudden cardiac death caused by asystolia or ventricular fibrillation, or evident neurological episodes with cerebrovascular accident and presyncope.

Objectives

The main objectives of the GESINUR study were to analyse the current protocols for the examination of T-LOC patients at the ED, to study syncope epidemiology in the PHS, to determine the incidence and characteristics of syncope, and point out possible errors in its diagnostic evaluation. In addition, adherence to the ESC guidelines for the diagnosis of syncope in the daily practice was studied.[6]

Data collection

A questionnaire was completed for each patient who met the enrolment criteria. Additionally, we highly recommended that a copy of the electrocardiogram (ECG) performed on the patient be attached to each questionnaire, for subsequent analysis by the Steering Committee (SC) of the GESINUR study. However, the other complementary diagnostic tests were decided freely by each physician. Each hospital chose a physician who was responsible for checking daily the inclusion of all patients with T-LOC who attended the ED and for completing any unfinished questionnaire.

Data review

In order to evaluate the adherence of the diagnosis to ESC guidelines, each questionnaire and the corresponding ECG were reviewed by the SC and, if needed, the diagnosis was reassigned.

Statistical analysis

Data were collected prospectively and analysed. Continuous variables were expressed as medians (interquartile range) if their distributions were not normal and as means $\pm$ SDs when their distributions were normal. Statistical comparisons of continuous variables between groups were performed by *t*-test or by the non-parametric Mann–Whitney *U* test for normal and non-normal distributions, respectively. Comparisons between quantitative and qualitative variables were performed by means of ANOVA test. Comparison between proportions was by means of the χ^2 test and Yates correction, when appropriate. All reported *P*-values are two-tailed, and $P < 0.05$ was considered significant. Data were analysed with V. 11.0 SPSS software (SPSS, Chicago, IL, USA).

Results

General characteristics

During the study period, 124 037 patients were admitted to the ED in 19 centres, of which 1419 (1.14%) were diagnosed of T-LOC and included in the study. Of these patients, 1217 were diagnosed of syncope (syncope group), whereas 202 were diagnosed of NST-LOC (NST-LOC group), which included 36 cases of T-LOC caused by epilepsy and 166 caused by diverse or unknown causes. Of the 1419 patients, only 394 (28%) required therapeutic intervention. Hospital admission was decided for 360 patients (25%): Cardiology, 92 (6%); Neurology, 25 (2%); Internal Medicine, 47 (3%); other, 55 (4%); and Observational Unit, 141 (10%). Twelve patients (0.85%) died in the ED. The remaining 1059 patients (75%) were discharged after a median of 4 (2 – 6) h in the ED.

The epidemiologic features of the study population are summarized in *Table 1*, according to final diagnosis in the ED (NST-LOC or syncope). The median age was 57 $\pm$ 23 years, and 732 patients (51.6%) were women, who were younger than the men (55 $\pm$ 25 vs. 60 $\pm$ 21 years, $P < 0.0001$). The population pyramid is shown in *Figure 1*. Of the 1419 patients, 233 (16%) had a previous history of heart disease, and 147 (10%) presented arrhythmia history, with atrial fibrillation in 98 (67%) patients being the most prevalent. When patient groups were compared according to final diagnosis, no significant epidemiological differences were detected between the NST-LOC and syncope groups, except in the percentage of patients with a history of neurological disease (23 vs. 10%, respectively; $P < 0.001$) and of other associated diseases (35 vs. 25%, respectively; $P < 0.003$).

Clinical characteristics

The clinical characteristics that defined T-LOC were collected carefully and are shown in *Table 2*. With regard to prodromal symptoms, the analysis of the cardiac syncope subgroup is especially interesting. Of the 141 patients (10% of the total) diagnosed with cardiac syncope (arrhythmic and cardiopulmonary), 83 (59%) presented prodromal symptoms: palpitations,

Table 1 General characteristics of patients

	Total (n = 1419)	Syncope (n = 1217)	NST-LOC (n = 202)	P
Female (%)	51.6	51.7	51.0	0.855
Age	57.3 ± 22.8	57 ± 22.8	59.4 ± 22.6	0.167
Male	59.55 ± 20.75	59.01 ± 20.85	62.8 ± 19.9	0.092
Female	55.3 ± 24.4	55.1 ± 24.4	56.1 ± 24.6	0.695
First loss of consciousness	898 (63%)	779 (64%)	119 (58%)	0.289
Presyncope	178 (18.6%)	161 (19.2%)	17 (14.5%)	0.227
Time in emergency department (h)	4.00 (2.00–6.00)	3.00 (2.00–6.00)	4.00 (1.00–7.00)	0.846
Recovery				
Spontaneous	1364 (96.1%)	1189 (97.7%)	175 (86.6%)	<0.001
Post-CPR	12 (0.8%)	5 (0.4%)	7 (3.5%)	
Previous medical history	406 (29%)	338 (28%)	68 (34%)	0.088
Heart disease	233 (16.4%)	196 (16%)	37 (18%)	0.435
Ischaemic	140 (60.1%)	117 (59.7%)	23 (62.2%)	
Valvular	34 (14.6%)	30 (15.3%)	4 (10.8%)	
Hypertensive	34 (14.6%)	27 (13.8%)	7 (18.9%)	
Dilated	10 (4.3%)	10 (5.1%)	0	
Hypertrophic	1 (0.4%)	1 (0.5%)	0	0.411
Congenital	3 (1.3%)	3 (1.5%)	0	
Congestive heart failure	7 (3%)	6 (3.1%)	1 (2.7%)	
Multiple	4 (1.7%)	2 (1%)	2 (5.4%)	
Documented arrhtyhmias	147 (10%)	123 (10%)	24 (11%)	0.443
Atrial fibrillation	98 (66.7%)	81 (65.9%)	17 (70.8%)	
Supraventricular tachycardia	3 (2%)	3 (2.4%)	0	
Atrial flutter	4 (2.7%)	2 (1.6%)	2 (8.3%)	0.321
Ventricular tachycardia/fibrillation	4 (2.7%)	4 (3.3%)	0	
Sinus node disease	4 (2.7%)	4 (3.3%)	0	
AV block	7 (4.8%)	7 (5.7%)	0	
Previous pacemaker implant	27 (18.4%)	22 (17.9%)	5 (20.8%)	
Neurological disorder/disease	173 (12%)	125 (10%)	48 (23%)	<0.001
Stroke/TIA	91 (52.6%)	70 (56%)	21 (43.8%)	
Epilepsy	22 (12.7%)	13 (10.4%)	9 (18.8%)	
Neoplasia	4 (2.3%)	2 (1.6%)	2 (4.2%)	
Multiple sclerosis	2 (1.2%)	1 (0.8%)	1 (2.1%)	0.211
Parkinson's disease	17 (9.8%)	14 (11.2%)	3 (6.3%)	
Autonomic nervous system disease	3 (1.7%)	1 (0.8%)	2 (4.2%)	
Dementia	21 (12.1%)	13 (10.4%)	8 (16.7%)	
Others	13 (7.5%)	11 (8.8%)	2 (4.2%)	
Hypertension	358 (25.2%)	304 (25%)	54 (26.7%)	0.595
Others	382 (26%)	310 (25%)	72 (35%)	0.003
Diabetes mellitus	163 (11.5%)	132 (10.8%)	31 (15.3%)	
COPD	50 (3.5%)	39 (2.7%)	11 (15.3%)	
Psychiatric disorders	43 (2.7%)	35 (2.9%)	8 (4.0%)	0.929
Cancer	31 (2.2%)	26 (2.1%)	5 (2.5%)	

NST-LOC, non-sustained transient loss of consciousness; CPR, cardiopulmonary resuscitation; AV block, atrioventricular block; TIA, transient ischaemic attack; COPD, chronic obstructive pulmonary disease.

17%; light-headedness/sweating/nausea, 42%; dyspnoea, 10%; chest pain, 16%; and other, 16%. Palpitations and chest pain were significantly more frequent in the cardiac syncope subgroup when comparing with non-cardiac syncope (19.1 vs. 2.9%; $P < 0.0001$).

Two hundred and sixty-six patients (19%) suffered mild trauma associated with T-LOC, whereas 22 patients (2%) experienced severe trauma. T-LOC recovery was complete and without sequel in 1187 patients (83%). The remaining patients presented confusion (124; 9%), sweating (42; 3%), transient neurological

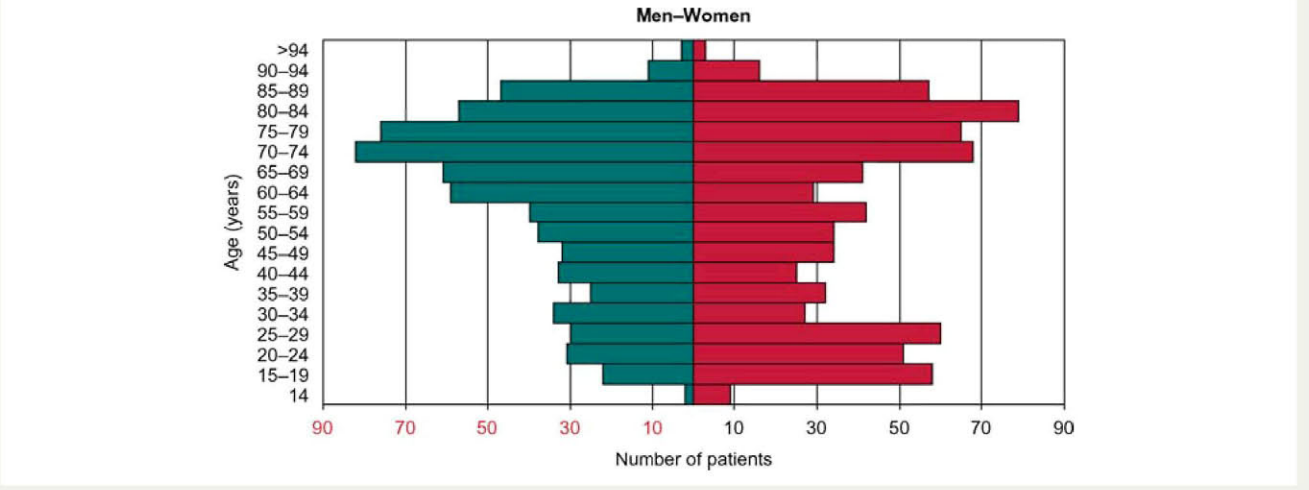

Figure 1 Age and sex pyramid for syncope incidence in GESINUR Study.

disorder (14; 1%), vertigo (13; 1%), and retrograde amnesia (14; 1%).

Clinical evaluation

Upon admission to the ED, all patients underwent a clinical work-up. During the evaluation, 1332 patients (93.9%) were conscious and oriented, and 87 patients (5%) were confused. Only 33 patients (2%) had focal neurological disorders.

Diagnostic tests

ECG was performed on 1335 patients (94%). Of the 1335 ECGs, 498 (37.3%) were classified as abnormal at the ED. The tests performed and their values in achieving final T-LOC diagnosis are reported in *Table 3*. Due to the fact that this was an observational study, the criteria for considering a specific test to be diagnostic was not pre-specified, and was left to the current practice of each centre. The positive diagnostic yield ranged from 0% for the chest X-ray to 12% for the orthostatic test. Some tests showed different diagnostic yields in the syncope and NST-LOC groups. For example, a brain CT scan was performed in 9% of patients with syncope and showed a diagnostic yield of 0%. In contrast, in the NST-LOC group a brain CT scan was performed in 37% of patients, with a diagnostic yield of 10.7%. Furthermore, the ECG showed a diagnostic yield of 7.7%, with a range from 8.9% in the syncope group to 0% in the NST-LOC group.

Final diagnosis at the ED

The final diagnosis at the ED was syncope in 1217 (86%) patients and NST-LOC in the remainder (202 patients; 14%). The cause of syncope was unexplained in 346 patients (28.5%), whereas for the remaining 871 patients (71.5%), the determined cause was neurally mediated (540), orthostatic (98), arrhythmic (89), cardiopulmonary (52), steal syndrome (1), situational (74), and non-specified aetiology (17). As mentioned previously, NST-LOC was diagnosed in 202 patients (14%): 87 with unexplained cause, 36 due to epilepsy, and 79 associated with other pathologies (23 stroke, 5 brain cancer, 7 toxic ingestion, 14 metabolic alterations, 5 dizziness, 6 psychiatric disorders, 2 blood haemorrhage, and 17 other pathologies).

Final reviewed diagnosis

All patient data sources (questionnaire, ECG) were reviewed by the SC to confirm that the diagnosis in the ED was made according to the ESC guidelines and to achieve a final reviewed diagnosis. The reviewed diagnosis showed statistically significant differences with the diagnosis made at the ED ($P < 0.001$). The final reviewed diagnosis was syncope in 1080 patients (76%) and NST-LOC in 339 patients (24%). Therefore, syncope was diagnosed correctly in 84% of patients. Differences found between diagnosis at the ED and the reviewed diagnosis by the SC are showed in *Figure 2*.

Discussion

The GESINUR study was the first large, multicentre, prospective, observational study of syncope to be performed since the ESC guidelines for syncope were published in 2001. This study provides important data about the management of syncope and adherence to the relevant guidelines in a country (Spain) with a very homogenous PHS.

General characteristics

In Spanish centres, the proportion of patients admitted to the ED due to T-LOC was 1.14%. These data are consistent with those reported in Europe and the USA.[2–4,7] However, the proportion of patients with T-LOC who were admitted to hospital in our country was only 25%, which is much less than the 43 – 98% reported by other authors.[1–3,7–10] Of the patients in our study who were admitted to hospital, 10% were admitted to short-term, in-hospital stay units. Despite this lower-cost approach to T-LOC management in Spain, patient safety was very similar to that reported by other authors for study populations similar in age and previous medical history, as confirmed by Morag *et al.*[9] and by preliminary follow-up data from the GESINUR-1 study.[11]

Table 2 Clinical characteristics of episode

	Total (n = 1419)	Syncope (n = 1217)	NST-LOC (n = 202)	P
Prodromal symptoms				
None	590 (41.6%)	466 (38.3%)	124 (61.4%)	
Palpitations	37 (2.6%)	31 (2.5%)	6 (3%)	
Light-headedness/sweating/nausea	678 (47.8%)	623 (51.2%)	55 (27.2%)	
Dyspnea	23 (1.6%)	22 (1.8%)	1 (0.5%)	<0.001
Chest pain	32 (2.2%)	27 (2.2%)	5 (2.5%)	
Others	33 (2.3%)	25 (2%)	8 (4%)	
Multiple	26 (1.8%)	23 (1.9%)	3 (1.5%)	
Precipitating/triggering factors				
None	709 (50.0%)	572 (47.0%)	137 (67.8%)	
Pain	111 (7.8%)	106 (8.7%)	5 (2.5%)	
Prolonged standing	109 (7.7%)	103 (8.5%)	6 (3.0%)	
Crowded or warm places	88 (6.2%)	80 (6.6%)	8 (4.0%)	
Emotions	74 (5.2%)	59 (4.8%)	15 (7.4%)	<0.001
Drugs	67 (4.7%)	59 (4.8%)	8 (4.0%)	
Situational	101 (7.1%)	97 (8.0%)	4 (2.0%)	
Post-stress/exercise	45 (3.2%)	41 (3.4%)	4 (2.0%)	
Sight of blood	29 (2.0%)	28 (2.3%)	1 (0.5%)	
Other	86 (6.1%)	72 (5.9%)	14 (6.9%)	
Neurological accompanying symptoms				
Convulsions	63 (4.4%)	30 (2.5%)	33 (16.3%)	<0.001
Head rotation	12 (0.8%)	9 (0.7%)	3 (1.5%)	0.511
Tongue biting	16 (1.1%)	8 (0.7%)	8 (4%)	<0.001
Cyanosis	13 (0.9%)	7 (0.6%)	30 (2.5%)	0.004
Trauma				
None	1131 (79.7%)	970 (79.7%)	161 (79.7%)	
Mild	266 (18.7%)	228 (18.7%)	38 (18.8%)	0.996
Severe	22 (1.6%)	19 (1.6%)	3 (1.5%)	
Episode duration				
Unknown	391 (27.6%)	324 (26.6%)	67 (33.2%)	
<3 min	708 (49.9%)	640 (52.6%)	68 (33.7%)	<0.001
3 − 5 min	179 (12.6%)	149 (12.2%)	30 (14.9%)	
>5 min	141 (9.9%)	104 (8.5%)	37 (18.3%)	
Recovery				
Spontaneous	1364 (96.1%)	1189 (97.7%)	175 (86.6%)	
After manoeuvre	12 (0.8%)	5 (0.4%)	7 (3.5%)	0.199
Not specified	43 (3.0%)	23 (1.9%)	20 (9.9%)	

NST-LOC, non-sustained transient loss of consciousness.

Interestingly, the present study revealed the difficulty in clearly defining syncope. Recently, the Ad Hoc Syncope Consortium stressed this issue.[12] We did not provide any definition of syncope in advance so that the physicians at the ED could decide freely whether T-LOC was due to syncope. Of the 1419 patients presenting T-LOC at the ED in the GESINUR study, 1217 were diagnosed with syncope. However, careful review of the questionnaires diminished the number to 1080, which indicates a 16% discordance. Failure to distinguish syncope from other forms of T-LOC is a common mistake, as detailed in other relevant medical writings.[13,14] Our results reveal that physicians need clear, practical, and accurate definitions of syncope to achieve an accurate diagnostic evaluation.

Clinical characteristics

In the present study, women who attended the ED were younger than men (55 ± 25 vs. 60 ± 21 years, $P = 0.0001$), which suggests a greater prevalence of syncope among younger women than younger men (*Figure 1*). In accordance with previous studies, >63% of patients were admitted to the ED due to their first syncopal episode.[7–10] There were no differences in previous medical history between the groups diagnosed at the ED as syncope or NST-LOC, but there were differences in the proportion of neurological and of other associated diseases (*Table 1*). The detailed data collection recommended by the protocol detected precipitant or triggering factors in 50% of total patients and prodromal symptoms

Table 3 Performed tests and their diagnostic values in 1419 patients

	Total (n = 1419)		Syncope (n = 1217)		NST-LOC (n = 202)		P-value
	Patients	Diagnosed	Patients	Diagnosed	Patients	Diagnosed	
Patients	1378 (97.1%)	444 (32.2%)	1186 (97.5%)	439 (37.0%)	192 (95.0%)	5 (2.6%)	<0.001
	Test done	Diagnostic	Test done	Diagnostic	Test done	Diagnostic	
Total tests	4023 (283.5%)	147 (3.7%)	3434 (282.2%)	136 (4.0%)	589 (291.6%)	11 (1.9%)	0.012
Carotid sinus massage	6 (0.4%)	0 (0.0%)	6 (0.5%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	NA
Orthostatic test	66 (4.7%)	8 (12.1%)	56 (4.6%)	8 (14.3%)	10 (5.0%)	0 (0.0%)	NS
Basic blood chemistry	1005 (70.8%)	7 (0.7%)	854 (70.2%)	5 (0.6%)	151 (74.8%)	2 (1.3%)	NS
Enzymes	412 (29.0%)	13 (3.2%)	368 (30.2%)	12 (3.3%)	44 (21.8%)	1 (2.3%)	NS
Chest X-ray	736 (51.9%)	0 (0.0%)	632 (51.9%)	0 (0.0%)	104 (51.5%)	0 (0.0%)	NA
ECG continuous monitoring	234 (16.5%)	4 (1.7%)	208 (17.1%)	4 (1.9%)	26 (12.9%)	0 (0.0%)	NS
Echocardiography	28 (2.0%)	2 (7.1%)	25 (2.1%)	2 (8.0%)	3 (1.5%)	0 (0.0%)	NS
Brain CT scan	184 (13.0%)	8 (4.3%)	109 (9.0%)	0 (0.0%)	75 (37.1%)	8 (10.7%)	<0.001
Thorax CT scan	17 (1.2%)	2 (11.8%)	13 (1.1%)	2 (15.4%)	4 (2.0%)	0 (0.0%)	NS
ECG	1335 (94.1%)	103 (7.7%)	1163 (95.6%)	103 (8.9%)	172 (85.1%)	0 (0.0%)	<0.001
Other tests	118 (8.3%)	(0.0%)	88 (7.2%)	(0.0%)	30 (14.9%)	(0.0%)	

NST-LOC, non-sustained transient loss of consciousness; NA, not applicable; NS, not significant; ECG, electrocardiogram; CT, computed axial tomography.

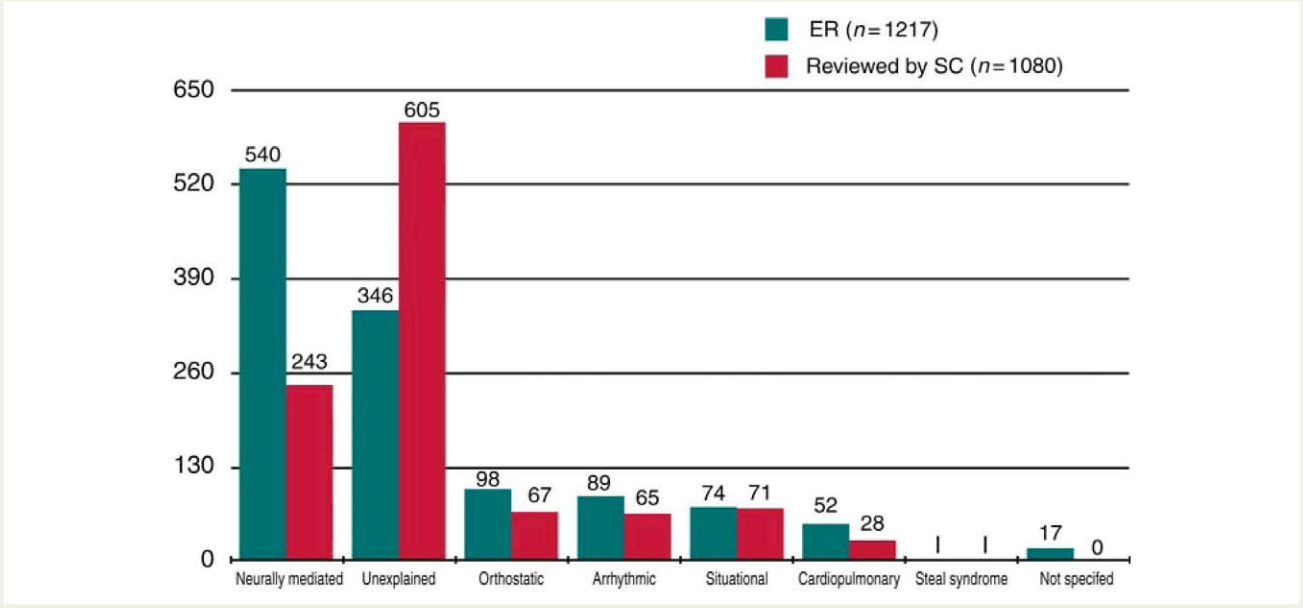

Figure 2 Differences between diagnoses made in the emergency department and by the Steering Committee.

in 58%, which reinforces the importance of performing a detailed clinical history to increase the diagnosis rate. Nevertheless, the cardiogenic syncope group showed a similar percentage of prodromal symptoms (59%), which confirms the results reported by Suzuki *et al.*[15] that 68% of cardiogenic syncope patients had prodromes. In our study, palpitations and chest pain were more frequent in the cardiogenic syncope group as previously showed. The trauma rate in patients with T-LOC was 20%, but only 2% of these conditions were considered severe.

Diagnostic tests

As other authors reported previously, the use of diagnostic tests is far from the ESC guideline recommendations.[2,6,10] The present multicentre study, which took place in a national PHS, showed once again that several tests with low diagnostic yield, such as the chest X-ray, are performed daily. However, other Class I indication tests are unusual, such as carotid sinus massage that was only performed in 0.4% of patients, which makes it difficult to evaluate their diagnostic value (0%). An orthostatic test had an

acceptable overall diagnostic yield (12%) and seemed to be able to discriminate both groups. A simple ECG in syncope patients is a Class I indication in the ESC and in the American guidelines, but is not widely performed, even in those patients at high risk of syncope (i.e. older or hospitalized patients).[6,16,17] For this reason, our protocol recommended the performance of an ECG in all patients. Protocol adherence was 94%. An abnormal ECG was found in 37.3% of patients, with a diagnostic yield of 7.7%.

Other frequently performed tests, such as brain CT scan, showed low diagnostic yields, ranging from 0% for the syncope group to 10.6% for the NST-LOC group. Giglio *et al.*[18] described an experience with 128 patients admitted to the ED due to syncope. Forty-four (34.3%) of these patients had a brain CT scan, which led to just one positive result and confirmed the low diagnostic value of the technique for these patients. Systematic application of the clinical guidelines would decrease the number of tests performed to achieve a final diagnosis.

Final diagnosis

Despite significant differences between the EDs and the reviewed final diagnoses, 84% of 1419 patients were correctly diagnosed with syncope. However, significant discrepancies in syncope diagnosis were detected; the most important difference was the classification of neurally mediated syncope. Only 32.8% of the neurally mediated syncope diagnoses were consistent between the ER and the SC. At the ED, 38% of patients were diagnosed with neurally mediated syncope, whereas the SC only identified 17%. This relatively large discrepancy is due to the adherence by the SC to the ESC guideline criteria that require prodromal symptoms and precipitants or triggering factors to diagnose a neurally mediated syncope.[6] In the ED, neurally mediated syncope was diagnosed using only one of these two criteria. For this reason, the rate of unexplained syncope as determined by the SC increased from 24 to 42%. This finding could be relevant in patient management and hospital admission and, furthermore, in the prognostic value as demonstrated by Soteriades *et al.*[13] Long-term follow-up of these patients will reveal whether diagnostic criteria according to the guidelines are adequate or too restrictive. Although there were fewer discrepancies in those syncopes with higher prognostic importance, only 65% of dysrhythmic syncope and 54% of cardiopulmonary syncope were correctly diagnosed.

Study limitations

This multicentre study collected data from patients with T-LOC who were admitted to the ED in a specific homogeneous PHS, but some variations cannot be disregarded, including those related to syncope management in several centres. Nevertheless, the high number of studied patients should homogenize the results. The GESINUR study was performed only at the ED, and some types of syncope likely are not represented, which probably led to underestimation of neurally mediated syncope. Finally, an equitable number of patient questionnaires and ECG was reviewed by each member of the SC. Only those patients of uncertain diagnosis were reviewed by all members to reach a diagnosis by consensus.

Conclusions

This study confirms that the rate of patients attended at the ED for T-LOC in our country is quite similar to that in other series. We conclude that clinical guideline adherence is still low, which results in the performance of a high number of diagnostic tests with low diagnostic yield and leads to important differences in final syncope diagnosis. Whether the low hospital admission rate in our country has any impact on long-term outcome is a matter to be addressed by ongoing studies.

Conflict of interest: none declared.

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Appendix 1

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